CLAIMS:

1. A method for the screening of ligands which bind a cerebral cortical voltage-dependent calcium channel $\alpha_2\delta$-1 subunit, said method comprising the steps of:

- contacting a secreted soluble recombinant calcium channel $\alpha_2\delta$-1 subunit polypeptide with:
  - a ligand of interest; and
  - a labelled compound which binds the $\alpha_2\delta$-1 subunit; and
- measuring the level of binding of the labelled compound to the $\alpha_2\delta$-1 subunit.

2. A method according to claim 1, wherein said contacting and said binding is in a well of a flashplate.

3. A method according to claim 1, wherein said secreted soluble recombinant calcium channel $\alpha_2\delta$-1 subunit polypeptide is selected from the group consisting of SEQ ID NO: 6, 7, 8, 9, 13, 14 and 15.

4. A method according to claim 1, wherein said secreted soluble recombinant calcium channel $\alpha_2\delta$-1 subunit polypeptide is selected from the group consisting of SEQ ID NO: 9 and 15.

5. A method according to claim 1, wherein said secreted soluble recombinant calcium channel $\alpha_2\delta$-1 subunit polypeptide is SEQ ID NO: 9.

SEQUENCE LISTING

1- porcine nucleotide sequence alpha2 delta-1

GGGGATTGATCTTCGATCGCGAAGATGGCTGCTGGCTGCCTGCTGGCCTTGACTCTGACAC
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CAAGTCATGGGTGGATAAAATGCAAGAAGACCTTGTCACCCTGGCAAAAACAGCAAGTGGA
GTCAATCAGCTTGTCGATATTTATGAAAAATACCAAGATTTGTATACTGTGGAACCAAATA
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2 - porcine nucleotide sequence

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3 - porcine nucleotide sequence

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4 - porcine nucleotide sequence

ATGGCTGCTGGCTGCCTGCTGGCCTTGACTCTGACACTTTTCCAATCTTTGCTGATCGGTC
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ACTGTGGTGGTGTTTCTTGA

5 - porcine amino acid sequence alpha2 delta-1

MAAGCLLALTLTLFQSLLIGPSSQEPFPSAVTIKSWVDKMQEDLVTLAKTASGVNQLVDIY
EKYQDLYTVEPNNARQLVEIAARDIEKLLSNRSKALVRLALEAEKVQAAHQWREDFASNEV
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6 - porcine amino acid sequence

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ERAQEIFAKYNKDKKVRVFTFSVGQHNYDRGPIQWMACENKGYYYEIPSIGAIRINTQEYLDVLGRPMVLAGDKAKQVQWTNVYLDALELGLVITGTLPVFNITGQNENKTNLKNQLILGVMGVDVSLEDIKRLTPRFTLCPNGYYFAIDPNGYVLLHPNLQPKNPKSQEPVTLDFLDAELENDIKVEIRNKMIDGESGEKTFRTLVKSQDERYIDKGNRTYTWTPVNGTDYSLALVLPTYSFYYIKAKIEETITQARSKKGKMKDSETLKPDNFEESGYTFIAPRDYCNDLKISDNNTEFLLNFNEFIDRKTPNNPSCNTDLINRVLLDAGFTNELVQNYWSKQKNIKGVKARFVVTDGGITRVYPKEAGENWQENPETYEDSFYKRSLDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGKLLKPAVVGIKIDVNSWIENFTKTSIRDPCAGPVCDCKRNSDVMDCVILDDGGFLLMANHDDYTNQIGRFFGEIDPSLMRHLVNISVYAFNKSYDYQSVCEPGAAPKQGAGHRSAYVPSIADILHIGWWATAAAWSILQQFLLSLTFPRLLEAVEMEDDDFTASLSKQSCITEQTQYFFDNDSKSFSGVLDCGNCSRIFHVEKLMNTNLIFIMVESKGTCPCDTRL

7 - porcine amino acid sequence

MAAGCLLALTLTLFQSLLIGPSSQEPFPSAVTIKSWVDKMQEDLVTLAKTASGVNQLVDIYEKYQDLYTVEPNNARQLVEIAARDIEKLLSNRSKALVRLALEAEKVQAAHQWREDFASNEVVYYNAKDDLDPEKNDSEPGSQRIKPVFIDDANFGRQISYQHAAVHIPTDIYEGSTIVLNELNWTSALDEVFKKNREEDPSLLWQVFGSATGLARYYPASPWVDNSRTPNKIDLYDVRRRPWYIQGAASPKDMLILVDVSGSVSGLTLKLIRTSVSEMLETLSDDDFVNVASFNSNAQDVSCFQHLVQANVRNKKVLKDAVNNITAKGITDYKKGFSFAFEQLLNYNVSRANCNKIIMLFTDGGEERAQEIFAKYNKDKKVRVFTFSVGQHNYDRGPIQWMACENKGYYYEIPSIGAIRINTQEYLDVLGRPMVLAGDKAKQVQWTNVYLDALELGLVITGTLPVFNITGQNENKTNLKNQLILGVMGVDVSLEDIKRLTPRFTLCPNGYYFAIDPNGYVLLHPNLQPKNPKSQEPVTLDFLDAELENDIKVEIRNKMIDGESGEKTFRTLVKSQDERYIDKGNRTYTWTPVNGTDYSLALVLPTYSFYYIKAKIEETITQARSKKGKMKDSETLKPDNFEESGYTFIAPRDYCNDLKISDNNTEFLLNFNEFIDRKTPNNPSCNTDLINRVLLDAGFTNELVQNYWSKQKNIKGVKARFVVTDGGITRVYPKEAGENWQENPETYEDSFYKRSLDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGKLLKPAVVGIKIDVNSWIENFTKTSIRDPCAGPVCDCKRNSDVMDCVILDDGGFLLMANHDDYTNQIGRFFGEIDPSLMRHLVNISVYAFNKSYDYQSVCEPGAAPKQGAGHRSAYVPSIADILHIGWWATAAAWSILQQFLLSLTFPRLLEAVEMEDDDFTASLSKQSCITEQTQYFFDNDSKSFSGVLDCGNCSRIFHVEKLMNTNLIFIMVESKGTCPCDTRLLIQAEQTSDGPDPCDMVK

8 - porcine amino acid sequence

MAAGCLLALTLTLFQSLLIGPSSQEPFPSAVTIKSWVDKMQEDLVTLAKTASGVNQLVDIY
EKYQDLYTVEPNNARQLVEIAARDIEKLLSNRSKALVRLALEAEKVQAAHQWREDFASNEV
VYYNAKDDLDPEKNDSEPGSQRIKPVFIDDANFGRQISYQHAAVHIPTDIYEGSTIVLNEL
NWTSALDEVFKKNREEDPSLLWQVFGSATGLARYYPASPWVDNSRTPNKIDLYDVRRRPWY
IQGAASPKDMLILVDVSGSVSGLTLKLIRTSVSEMLETLSDDDFVNVASFNSNAQDVSCFQ
HLVQANVRNKKVLKDAVNNITAKGITDYKKGFSFAFEQLLNYNVSRANCNKIIMLFTDGGE
ERAQEIFAKYNKDKKVRVFTFSVGQHNYDRGPIQWMACENKGYYYEIPSIGAIRINTQEYL
DVLGRPMVLAGDKAKQVQWTNVYLDALELGLVITGTLPVFNITGQNENKTNLKNQLILGVM
GVDVSLEDIKRLTPRFTLCPNGYYFAIDPNGYVLLHPNLQPKNPKSQEPVTLDFLDAELEN
DIKVEIRNKMIDGESGEKTFRTLVKSQDERYIDKGNRTYTWTPVNGTDYSLALVLPTYSFY
YIKAKIEETITQARSKKGKMKDSETLKPDNFEESGYTFIAPRDYCNDLKISDNNTEFLLNF
NEFIDRKTPNNPSCNTDLINRVLLDAGFTNELVQNYWSKQKNIKGVKARFVVTDGGITRVY
PKEAGENWQENPETYEDSFYKRSLDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGK
LLKPAVVGIKIDVNSWIENFTKTSIRDPCAGPVCDCKRNSDVMDCVILDDGGFLLMANHDD
YTNQIGRFFGEIDPSLMRHLVNISVYAFNKSYDYQSVCEPGAAPKQGAGHRSAYVPSIADI
LHIGWWATAAAWSILQQFLLSLTFPRLLEAVEMEDDDFTASLSKQSCITEQTQYFFDNDSK
SFSGVLDCGNCSRIFHVEKLMNTNLIFIMVESKGTCPCDTRLLIQAEQTSDGPDPCDMVKQ
PRYRKGPDVCFDNNALEDYTDCGGVS

9 - porcine amino acid sequence

MAAGCLLALTLTLFQSLLIGPSSQEPFPSAVTIKSWVDKMQEDLVTLAKTASGVNQLVDIY
EKYQDLYTVEPNNARQLVEIAARDIEKLLSNRSKALVRLALEAEKVQAAHQWREDFASNEV
VYYNAKDDLDPEKNDSEPGSQRIKPVFIDDANFGRQISYQHAAVHIPTDIYEGSTIVLNEL
NWTSALDEVFKKNREEDPSLLWQVFGSATGLARYYPASPWVDNSRTPNKIDLYDVRRRPWY
IQGAASPKDMLILVDVSGSVSGLTLKLIRTSVSEMLETLSDDDFVNVASFNSNAQDVSCFQ
HLVQANVRNKKVLKDAVNNITAKGITDYKKGFSFAFEQLLNYNVSRANCNKIIMLFTDGGE
ERAQEIFAKYNKDKKVRVFTFSVGQHNYDRGPIQWMACENKGYYYEIPSIGAIRINTQEYL
DVLGRPMVLAGDKAKQVQWTNVYLDALELGLVITGTLPVFNITGQNENKTNLKNQLILGVM
GVDVSLEDIKRLTPRFTLCPNGYYFAIDPNGYVLLHPNLQPKNPKSQEPVTLDFLDAELEN
DIKVEIRNKMIDGESGEKTFRTLVKSQDERYIDKGNRTYTWTPVNGTDYSLALVLPTYSFY
YIKAKIEETITQARSKKGKMKDSETLKPDNFEESGYTFIAPRDYCNDLKISDNNTEFLLNF

NEFIDRKTPNNPSCNTDLINRVLLDAGFTNELVQNYWSKQKNIKGVKARFVVTDGGITRVY
PKEAGENWQENPETYEDSFYKRSLDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGK
LLKPAVVGIKIDVNSWIENFTKTSIRDPCAGPVCDCKRNSDVMDCVILDDGGFLLMANHDD
YTNQIGRFFGEIDPSLMRHLVNISVYAFNKSYDYQSVCEPGAAPKQGAGHRSAYVPSIADI
LHIGWWATAAAWSILQQFLLSLTFPRLLEAVEMEDDDFTASLSKQSCITEQTQYFFDNDSK
SFSGVLDCGNCSRIFHVEKLMNTNLIFIMVESKGTCPCDTRLLIQAEQTSDGPDPCDMVKQ
PRYRKGPDVCFDNNALEDYTDCGGVSHHHHHH

10 - human nucleotide sequence

ATGGCTGCTGGCTGCCTGCTGGCCTTGACTCTGACACTTTTCCAATCTTTGCTCATCGGCC
CCTCGTCGGAGGAGCCGTTCCCTTCGGCCGTCACTATCAAATCATGGGTGGATAAGATGCA
AGAAGACCTTGTCACACTGGCAAAAACAGCAAGTGGAGTCAATCAGCTTGTTGATATTTAT
GAGAAATATCAAGATTTGTATACTGTGGAACCAAATAATGCACGCCAGCTGGTAGAAATTG
CAGCCAGGGATATTGAGAAACTTCTGAGCAACAGATCTAAAGCCCTGGTGAGCCTGGCATT
GGAAGCGGAGAAAGTTCAAGCAGCTCACCAGTGGAGAGAAGATTTTGCAAGCAATGAAGTT
GTCTACTACAATGCAAAGGATGATCTCGATCCTGAGAAAAATGACAGTGAGCCAGGCAGCC
AGAGGATAAAACCTGTTTTCATTGAAGATGCTAATTTTGGACGACAAATATCTTATCAGCA
CGCAGCAGTCCATATTCCTACTGACATCTATGAGGGCTCAACAATTGTGTTAAATGAACTC
AACTGGACAAGTGCCTTAGATGAAGTTTTCAAAAAGAATCGCGAGGAAGACCCTTCATTAT
TGTGGCAGGTTTTTGGCAGTGCCACTGGCCTAGCTCGATATTATCCAGCTTCACCATGGGT
TGATAATAGTAGAACTCCAAATAAGATTGACCTTTATGATGTACGCAGAAGACCATGGTAC
ATCCAAGGAGCTGCATCTCCTAAAGACATGCTTATTCTGGTGGATGTGAGTGGAAGTGTTA
GTGGATTGACACTTAAACTGATCCGAACATCTGTCTCCGAAATGTTAGAAACCCTCTCAGA
TGATGATTTCGTGAATGTAGCTTCATTTAACAGCAATGCTCAGGATGTAAGCTGTTTTCAG
CACCTTGTCCAAGCAAATGTAAGAAATAAAAAAGTGTTGAAAGACGCGGTGAATAATATCA
CAGCCAAAGGAATTACAGATTATAAGAAGGGCTTTAGTTTTGCTTTTGAACAGCTGCTTAA
TTATAATGTTTCCAGAGCAAACTGCAATAAGATTATTATGCTATTCACGGATGGAGGAGAA
GAGAGAGCCCAGGAGATATTTAACAAATACAATAAAGATAAAAAAGTACGTGTATTCAGGT
TTTCAGTTGGTCAACACAATTATGAGAGAGGACCTATTCAGTGGATGGCCTGTGAAAACAA
AGGTTATTATTATGAAATTCCTTCCATTGGTGCAATAAGAATCAATACTCAGGAATATTTG
GATGTTTTGGGAAGACCAATGGTTTTAGCAGGAGACAAAGCTAAGCAAGTCCAATGGACAA
ATGTGTACCTGGATGCATTGGAACTGGGACTTGTCATTACTGGAACTCTTCCGGTCTTCAA

CATAACCGGCCAATTTGAAAATAAGACAAACTTAAAGAACCAGCTGATTCTTGGTGTGATG
GGAGTAGATGTGTCTTTGGAAGATATTAAAAGACTGACACCACGTTTTACACTGTGCCCCA
ATGGGTATTACTTTGCAATCGATCCTAATGGTTATGTTTTATTACATCCAAATCTTCAGCC
AAAGAACCCCAAATCTCAGGAGCCAGTAACATTGGATTTCCTTGATGCAGAGTTAGAGAAT
GATATTAAAGTGGAGATTCGAAATAAGATGATTGATGGGGAAAGTGGAGAAAAAACATTCA
GAACTCTGGTTAAATCTCAAGATGAGAGATATATTGACAAAGGAAACAGGACATACACATG
GACACCTGTCAATGGCACAGATTACAGTTTGGCCTTGGTATTACCAACCTACAGTTTTTAC
TATATAAAAGCCAAACTAGAAGAGACAATAACTCAGGCCAGATCAAAAAAGGGCAAAATGA
AGGATTCGGAAACCCTGAAGCCAGATAATTTTGAAGAATCTGGCTATACATTCATAGCACC
AAGAGATTACTGCAATGACCTGAAAATATCGGATAATAACACTGAATTTCTTTTAAATTTC
AACGAGTTTATTGATAGAAAAACTCCAAACAACCCATCATGTAACGCGGATTTGATTAATA
GAGTCTTGCTTGATGCAGGCTTTACAAATGAACTTGTCCAAAATTACTGGAGTAAGCAGAA
AAATATCAAGGGAGTGAAAGCACGATTTGTTGTGACTGATGGTGGGATTACCAGAGTTTAT
CCCAAAGAGGCTGGAGAAAATTGGCAAGAAAACCCAGAGACATATGAGGACAGCTTCTATA
AAAGGAGCCTAGATAATGATAACTATGTTTTCACTGCTCCCTACTTTAACAAAAGTGGACC
TGGTGCCTATGAATCGGGCATTATGGTAAGCAAAGCTGTAGAAATATATATTCAAGGGAAA
CTTCTTAAACCTGCAGTTGTTGGAATTAAAATTGATGTAAATTCCTGGATAGAGAATTTCA
CCAAAACCTCAATCAGAGATCCGTGTGCTGGTCCAGTTTGTGACTGCAAAAGAAACAGTGA
CGTAATGGATTGTGTGATTCTGGATGATGGTGGGTTTCTTCTGATGGCAAATCATGATGAT
TATACTAATCAGATTGGAAGATTTTTTGGAGAGATTGATCCCAGCTTGATGAGACACCTGG
TTAATATATCAGTTTATGCTTTTAACAAATCTTATGATTATCAGTCAGTATGTGAGCCCGG
TGCTGCACCAAAACAAGGAGCAGGACATCGCTCAGCATATGTGCCATCAGTAGCAGACATA
TTACAAATTGGCTGGTGGGCCACTGCTGCTGCCTGGTCTATTCTACAGCAGTTTCTCTTGA
GTTTGACCTTTCCACGACTCCTTGAGGCAGTTGAGATGGAGGATGATGACTTCACGGCCTC
CCTGTCCAAGCAGAGCTGCATTACTGAACAAACCCAGTATTTCTTCGATAACGACAGTAAA
TCATTCAGTGGTGTATTAGACTGTGGAAACTGTTCCAGAATCTTTCATGGAGAAAAGCTTA
TGAACACCAACTTAATATTCATAATGGTTGAGAGCAAAGGGACATGTCCATGTGACACACG
ACTGC

11 - human nucleotide sequence

ATGGCTGCTGGCTGCCTGCTGGCCTTGACTCTGACACTTTTCCAATCTTTGCTCATCGGCC
CCTCGTCGGAGGAGCCGTTCCCTTCGGCCGTCACTATCAAATCATGGGTGGATAAGATGCA

AGAAGACCTTGTCACACTGGCAAAAACAGCAAGTGGAGTCAATCAGCTTGTTGATATTTAT
GAGAAATATCAAGATTTGTATACTGTGGAACCAAATAATGCACGCCAGCTGGTAGAAATTG
CAGCCAGGGATATTGAGAAACTTCTGAGCAACAGATCTAAAGCCCTGGTGAGCCTGGCATT
GGAAGCGGAGAAAGTTCAAGCAGCTCACCAGTGGAGAGAAGATTTTGCAAGCAATGAAGTT
GTCTACTACAATGCAAAGGATGATCTCGATCCTGAGAAAAATGACAGTGAGCCAGGCAGCC
AGAGGATAAAACCTGTTTTCATTGAAGATGCTAATTTTGGACGACAAATATCTTATCAGCA
CGCAGCAGTCCATATTCCTACTGACATCTATGAGGGCTCAACAATTGTGTTAAATGAACTC
AACTGGACAAGTGCCTTAGATGAAGTTTTCAAAAAGAATCGCGAGGAAGACCCTTCATTAT
TGTGGCAGGTTTTTGGCAGTGCCACTGGCCTAGCTCGATATTATCCAGCTTCACCATGGGT
TGATAATAGTAGAACTCCAAATAAGATTGACCTTTATGATGTACGCAGAAGACCATGGTAC
ATCCAAGGAGCTGCATCTCCTAAAGACATGCTTATTCTGGTGGATGTGAGTGGAAGTGTTA
GTGGATTGACACTTAAACTGATCCGAACATCTGTCTCCGAAATGTTAGAAACCCTCTCAGA
TGATGATTTCGTGAATGTAGCTTCATTTAACAGCAATGCTCAGGATGTAAGCTGTTTTCAG
CACCTTGTCCAAGCAAATGTAAGAAATAAAAAAGTGTTGAAAGACGCGGTGAATAATATCA
CAGCCAAAGGAATTACAGATTATAAGAAGGGCTTTAGTTTTGCTTTTGAACAGCTGCTTAA
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GAGAGAGCCCAGGAGATATTTAACAAATACAATAAAGATAAAAAAGTACGTGTATTCAGGT
TTTCAGTTGGTCAACACAATTATGAGAGAGGACCTATTCAGTGGATGGCCTGTGAAAACAA
AGGTTATTATTATGAAATTCCTTCCATTGGTGCAATAAGAATCAATACTCAGGAATATTTG
GATGTTTTGGGAAGACCAATGGTTTTAGCAGGAGACAAAGCTAAGCAAGTCCAATGGACAA
ATGTGTACCTGGATGCATTGGAACTGGGACTTGTCATTACTGGAACTCTTCCGGTCTTCAA
CATAACCGGCCAATTTGAAAATAAGACAAACTTAAAGAACCAGCTGATTCTTGGTGTGATG
GGAGTAGATGTGTCTTTGGAAGATATTAAAAGACTGACACCACGTTTTACACTGTGCCCCA
ATGGGTATTACTTTGCAATCGATCCTAATGGTTATGTTTTATTACATCCAAATCTTCAGCC
AAAGAACCCCAAATCTCAGGAGCCAGTAACATTGGATTTCCTTGATGCAGAGTTAGAGAAT
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GAACTCTGGTTAAATCTCAAGATGAGAGATATATTGACAAAGGAAACAGGACATACACATG
GACACCTGTCAATGGCACAGATTACAGTTTGGCCTTGGTATTACCAACCTACAGTTTTTAC
TATATAAAAGCCAAACTAGAAGAGACAATAACTCAGGCCAGATCAAAAAAGGGCAAAATGA
AGGATTCGGAAACCCTGAAGCCAGATAATTTTGAAGAATCTGGCTATACATTCATAGCACC
AAGAGATTACTGCAATGACCTGAAAATATCGGATAATAACACTGAATTTCTTTTAAATTTC
AACGAGTTTATTGATAGAAAAACTCCAAACAACCCATCATGTAACGCGGATTTGATTAATA

GAGTCTTGCTTGATGCAGGCTTTACAAATGAACTTGTCCAAAATTACTGGAGTAAGCAGAA
AAATATCAAGGGAGTGAAAGCACGATTTGTTGTGACTGATGGTGGGATTACCAGAGTTTAT
CCCAAAGAGGCTGGAGAAAATTGGCAAGAAAACCCAGAGACATATGAGGACAGCTTCTATA
AAAGGAGCCTAGATAATGATAACTATGTTTTCACTGCTCCCTACTTTAACAAAAGTGGACC
TGGTGCCTATGAATCGGGCATTATGGTAAGCAAAGCTGTAGAAATATATATTCAAGGGAAA
CTTCTTAAACCTGCAGTTGTTGGAATTAAAATTGATGTAAATTCCTGGATAGAGAATTTCA
CCAAAACCTCAATCAGAGATCCGTGTGCTGGTCCAGTTTGTGACTGCAAAAGAAACAGTGA
CGTAATGGATTGTGTGATTCTGGATGATGGTGGGTTTCTTCTGATGGCAAATCATGATGAT
TATACTAATCAGATTGGAAGATTTTTTGGAGAGATTGATCCCAGCTTGATGAGACACCTGG
TTAATATATCAGTTTATGCTTTTAACAAATCTTATGATTATCAGTCAGTATGTGAGCCCGG
TGCTGCACCAAAACAAGGAGCAGGACATCGCTCAGCATATGTGCCATCAGTAGCAGACATA
TTACAAATTGGCTGGTGGGCCACTGCTGCTGCCTGGTCTATTCTACAGCAGTTTCTCTTGA
GTTTGACCTTTCCACGACTCCTTGAGGCAGTTGAGATGGAGGATGATGACTTCACGGCCTC
CCTGTCCAAGCAGAGCTGCATTACTGAACAAACCCAGTATTTCTTCGATAACGACAGTAAA
TCATTCAGTGGTGTATTAGACTGTGGAAACTGTTCCAGAATCTTTCATGGAGAAAAGCTTA
TGAACACCAACTTAATATTCATAATGGTTGAGAGCAAAGGGACATGTCCATGTGACACACG
ACTGCTCATACAAGCGGAGCAGACTTCTGACGGTCCAAATCCTTGTGACATGGTTAAGC

12 - human nucleotide sequence

ATGGCTGCTGGCTGCCTGCTGGCCTTGACTCTGACACTTTTCCAATCTTTGCTCATCGGCC
CCTCGTCGGAGGAGCCGTTCCCTTCGGCCGTCACTATCAAATCATGGGTGGATAAGATGCA
AGAAGACCTTGTCACACTGGCAAAAACAGCAAGTGGAGTCAATCAGCTTGTTGATATTTAT
GAGAAATATCAAGATTTGTATACTGTGGAACCAAATAATGCACGCCAGCTGGTAGAAATTG
CAGCCAGGGATATTGAGAAACTTCTGAGCAACAGATCTAAAGCCCTGGTGAGCCTGGCATT
GGAAGCGGAGAAAGTTCAAGCAGCTCACCAGTGGAGAGAAGATTTTGCAAGCAATGAAGTT
GTCTACTACAATGCAAAGGATGATCTCGATCCTGAGAAAAATGACAGTGAGCCAGGCAGCC
AGAGGATAAAACCTGTTTTCATTGAAGATGCTAATTTTGGACGACAAATATCTTATCAGCA
CGCAGCAGTCCATATTCCTACTGACATCTATGAGGGCTCAACAATTGTGTTAAATGAACTC
AACTGGACAAGTGCCTTAGATGAAGTTTTCAAAAAGAATCGCGAGGAAGACCCTTCATTAT
TGTGGCAGGTTTTTGGCAGTGCCACTGGCCTAGCTCGATATTATCCAGCTTCACCATGGGT
TGATAATAGTAGAACTCCAAATAAGATTGACCTTTATGATGTACGCAGAAGACCATGGTAC
ATCCAAGGAGCTGCATCTCCTAAAGACATGCTTATTCTGGTGGATGTGAGTGGAAGTGTTA

GTGGATTGACACTTAAACTGATCCGAACATCTGTCTCCGAAATGTTAGAAACCCTCTCAGA
TGATGATTTCGTGAATGTAGCTTCATTTAACAGCAATGCTCAGGATGTAAGCTGTTTTCAG
CACCTTGTCCAAGCAAATGTAAGAAATAAAAAAGTGTTGAAAGACGCGGTGAATAATATCA
CAGCCAAAGGAATTACAGATTATAAGAAGGGCTTTAGTTTTGCTTTTGAACAGCTGCTTAA
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GATGTTTTGGGAAGACCAATGGTTTTAGCAGGAGACAAAGCTAAGCAAGTCCAATGGACAA
ATGTGTACCTGGATGCATTGGAACTGGGACTTGTCATTACTGGAACTCTTCCGGTCTTCAA
CATAACCGGCCAATTTGAAAATAAGACAAACTTAAAGAACCAGCTGATTCTTGGTGTGATG
GGAGTAGATGTGTCTTTGGAAGATATTAAAAGACTGACACCACGTTTTACACTGTGCCCCA
ATGGGTATTACTTTGCAATCGATCCTAATGGTTATGTTTTATTACATCCAAATCTTCAGCC
AAAGAACCCCAAATCTCAGGAGCCAGTAACATTGGATTTCCTTGATGCAGAGTTAGAGAAT
GATATTAAAGTGGAGATTCGAAATAAGATGATTGATGGGGAAAGTGGAGAAAAAACATTCA
GAACTCTGGTTAAATCTCAAGATGAGAGATATATTGACAAAGGAAACAGGACATACACATG
GACACCTGTCAATGGCACAGATTACAGTTTGGCCTTGGTATTACCAACCTACAGTTTTTAC
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AGGATTCGGAAACCCTGAAGCCAGATAATTTTGAAGAATCTGGCTATACATTCATAGCACC
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AACGAGTTTATTGATAGAAAAACTCCAAACAACCCATCATGTAACGCGGATTTGATTAATA
GAGTCTTGCTTGATGCAGGCTTTACAAATGAACTTGTCCAAAATTACTGGAGTAAGCAGAA
AAATATCAAGGGAGTGAAAGCACGATTTGTTGTGACTGATGGTGGGATTACCAGAGTTTAT
CCCAAAGAGGCTGGAGAAAATTGGCAAGAAAACCCAGAGACATATGAGGACAGCTTCTATA
AAAGGAGCCTAGATAATGATAACTATGTTTTCACTGCTCCCTACTTTAACAAAAGTGGACC
TGGTGCCTATGAATCGGGCATTATGGTAAGCAAAGCTGTAGAAATATATATTCAAGGGAAA
CTTCTTAAACCTGCAGTTGTTGGAATTAAAATTGATGTAAATTCCTGGATAGAGAATTTCA
CCAAAACCTCAATCAGAGATCCGTGTGCTGGTCCAGTTTGTGACTGCAAAAGAAACAGTGA
CGTAATGGATTGTGTGATTCTGGATGATGGTGGGTTTCTTCTGATGGCAAATCATGATGAT
TATACTAATCAGATTGGAAGATTTTTTGGAGAGATTGATCCCAGCTTGATGAGACACCTGG
TTAATATATCAGTTTATGCTTTTAACAAATCTTATGATTATCAGTCAGTATGTGAGCCCGG
TGCTGCACCAAAACAAGGAGCAGGACATCGCTCAGCATATGTGCCATCAGTAGCAGACATA

TTACAAATTGGCTGGTGGGCCACTGCTGCTGCCTGGTCTATTCTACAGCAGTTTCTCTTGA
GTTTGACCTTTCCACGACTCCTTGAGGCAGTTGAGATGGAGGATGATGACTTCACGGCCTC
CCTGTCCAAGCAGAGCTGCATTACTGAACAAACCCAGTATTTCTTCGATAACGACAGTAAA
TCATTCAGTGGTGTATTAGACTGTGGAAACTGTTCCAGAATCTTTCATGGAGAAAAGCTTA
TGAACACCAACTTAATATTCATAATGGTTGAGAGCAAAGGGACATGTCCATGTGACACACG
ACTGCTCATACAAGCGGAGCAGACTTCTGACGGTCCAAATCCTTGTGACATGGTTAAGCAA
CCTAGATACCGAAAAGGGCCTGATGTCTGCTTTGATAACAATGTCTTGGAGGATTATACTG
ACTGTGGTGGTGTTTCTG

13 - human amino acid sequence

MAAGCLLALTLTLFQSLLIGPSSEEPFPSAVTIKSWVDKMQEDLVTLAKTASGVNQLVDIY
EKYQDLYTVEPNNARQLVEIAARDIEKLLSNRSKALVSLALEAEKVQAAHQWREDFASNEV
VYYNAKDDLDPEKNDSEPGSQRIKPVFIEDANFGRQISYQHAAVHIPTDIYEGSTIVLNEL
NWTSALDEVFKKNREEDPSLLWQVFGSATGLARYYPASPWVDNSRTPNKIDLYDVRRRPWY
IQGAASPKDMLILVDVSGSVSGLTLKLIRTSVSEMLETLSDDDFVNVASFNSNAQDVSCFQ
HLVQANVRNKKVLKDAVNNITAKGITDYKKGFSFAFEQLLNYNVSRANCNKIIMLFTDGGE
ERAQEIFNKYNKDKKVRVFRFSVGQHNYERGPIQWMACENKGYYYEIPSIGAIRINTQEYL
DVLGRPMVLAGDKAKQVQWTNVYLDALELGLVITGTLPVFNITGQFENKTNLKNQLILGVM
GVDVSLEDIKRLTPRFTLCPNGYYFAIDPNGYVLLHPNLQPKNPKSQEPVTLDFLDAELEN
DIKVEIRNKMIDGESGEKTFRTLVKSQDERYIDKGNRTYTWTPVNGTDYSLALVLPTYSFY
YIKAKLEETITQARSKKGKMKDSETLKPDNFEESGYTFIAPRDYCNDLKISDNNTEFLLNF
NEFIDRKTPNNPSCNADLINRVLLDAGFTNELVQNYWSKQKNIKGVKARFVVTDGGITRVY
PKEAGENWQENPETYEDSFYKRSLDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGK
LLKPAVVGIKIDVNSWIENFTKTSIRDPCAGPVCDCKRNSDVMDCVILDDGGFLLMANHDD
YTNQIGRFFGEIDPSLMRHLVNISVYAFNKSYDYQSVCEPGAAPKQGAGHRSAYVPSVADI
LQIGWWATAAAWSILQQFLLSLTFPRLLEAVEMEDDDFTASLSKQSCITEQTQYFFDNDSK
SFSGVLDCGNCSRIFHGEKLMNTNLIFIMVESKGTCPCDTRL

14 - human amino acid sequence

MAAGCLLALTLTLFQSLLIGPSSEEPFPSAVTIKSWVDKMQEDLVTLAKTASGVNQLVDIY
EKYQDLYTVEPNNARQLVEIAARDIEKLLSNRSKALVSLALEAEKVQAAHQWREDFASNEV
VYYNAKDDLDPEKNDSEPGSQRIKPVFIEDANFGRQISYQHAAVHIPTDIYEGSTIVLNEL

NWTSALDEVFKKNREEDPSLLWQVFGSATGLARYYPASPWVDNSRTPNKIDLYDVRRRPWY
IQGAASPKDMLILVDVSGSVSGLTLKLIRTSVSEMLETLSDDDFVNVASFNSNAQDVSCFQ
HLVQANVRNKKVLKDAVNNITAKGITDYKKGFSFAFEQLLNYNVSRANCNKIIMLFTDGGE
ERAQEIFNKYNKDKKVRVFRFSVGQHNYERGPIQWMACENKGYYYEIPSIGAIRINTQEYL
DVLGRPMVLAGDKAKQVQWTNVYLDALELGLVITGTLPVFNITGQFENKTNLKNQLILGVM
GVDVSLEDIKRLTPRFTLCPNGYYFAIDPNGYVLLHPNLQPKNPKSQEPVTLDFLDAELEN
DIKVEIRNKMIDGESGEKTFRTLVKSQDERYIDKGNRTYTWTPVNGTDYSLALVLPTYSFY
YIKAKLEETITQARSKKGKMKDSETLKPDNFEESGYTFIAPRDYCNDLKISDNNTEFLLNF
NEFIDRKTPNNPSCNADLINRVLLDAGFTNELVQNYWSKQKNIKGVKARFVVTDGGITRVY
PKEAGENWQENPETYEDSFYKRSLDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGK
LLKPAVVGIKIDVNSWIENFTKTSIRDPCAGPVCDCKRNSDVMDCVILDDGGFLLMANHDD
YTNQIGRFFGEIDPSLMRHLVNISVYAFNKSYDYQSVCEPGAAPKQGAGHRSAYVPSVADI
LQIGWWATAAAWSILQQFLLSLTFPRLLEAVEMEDDDFTASLSKQSCITEQTQYFFDNDSK
SFSGVLDCGNCSRIFHGEKLMNTNLIFIMVESKGTCPCDTRLLIQAEQTSDGPNPCDMVK

15 - human amino acid sequence

MAAGCLLALTLTLFQSLLIGPSSEEPFPSAVTIKSWVDKMQEDLVTLAKTASGVNQLVDIY
EKYQDLYTVEPNNARQLVEIAARDIEKLLSNRSKALVSLALEAEKVQAAHQWREDFASNEV
VYYNAKDDLDPEKNDSEPGSQRIKPVFIEDANFGRQISYQHAAVHIPTDIYEGSTIVLNEL
NWTSALDEVFKKNREEDPSLLWQVFGSATGLARYYPASPWVDNSRTPNKIDLYDVRRRPWY
IQGAASPKDMLILVDVSGSVSGLTLKLIRTSVSEMLETLSDDDFVNVASFNSNAQDVSCFQ
HLVQANVRNKKVLKDAVNNITAKGITDYKKGFSFAFEQLLNYNVSRANCNKIIMLFTDGGE
ERAQEIFNKYNKDKKVRVFRFSVGQHNYERGPIQWMACENKGYYYEIPSIGAIRINTQEYL
DVLGRPMVLAGDKAKQVQWTNVYLDALELGLVITGTLPVFNITGQFENKTNLKNQLILGVM
GVDVSLEDIKRLTPRFTLCPNGYYFAIDPNGYVLLHPNLQPKNPKSQEPVTLDFLDAELEN
DIKVEIRNKMIDGESGEKTFRTLVKSQDERYIDKGNRTYTWTPVNGTDYSLALVLPTYSFY
YIKAKLEETITQARSKKGKMKDSETLKPDNFEESGYTFIAPRDYCNDLKISDNNTEFLLNF
NEFIDRKTPNNPSCNADLINRVLLDAGFTNELVQNYWSKQKNIKGVKARFVVTDGGITRVY
PKEAGENWQENPETYEDSFYKRSLDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGK
LLKPAVVGIKIDVNSWIENFTKTSIRDPCAGPVCDCKRNSDVMDCVILDDGGFLLMANHDD
YTNQIGRFFGEIDPSLMRHLVNISVYAFNKSYDYQSVCEPGAAPKQGAGHRSAYVPSVADI
LQIGWWATAAAWSILQQFLLSLTFPRLLEAVEMEDDDFTASLSKQSCITEQTQYFFDNDSK

SFSGVLDCGNCSRIFHGEKLMNTNLIFIMVESKGTCPCDTRLLIQAEQTSDGPNPCDMVKQ
PRYRKGPDVCFDNNVLEDYTDCGGVS

16 - human alpha2 delta-1 amino acid sequence

MAAGCLLALTLTLFQSLLIGPSSEEPFPSAVTIKSWVDKMQEDLVTLAKTASGVNQLVDIY
EKYQDLYTVEPNNARQLVEIAARDIEKLLSNRSKALVSLALEAEKVQAAHQWREDFASNEV
VYYNAKDDLDPEKNDSEPGSQRIKPVFIEDANFGRQISYQHAAVHIPTDIYEGSTIVLNEL
NWTSALDEVFKKNREEDPSLLWQVFGSATGLARYYPASPWVDNSRTPNKIDLYDVRRRPWY
IQGAASPKDMLILVDVSGSVSGLTLKLIRTSVSEMLETLSDDDFVNVASFNSNAQDVSCFQ
HLVQANVRNKKVLKDAVNNITAKGITDYKKGFSFAFEQLLNYNVSRANCNKIIMLFTDGGE
ERAQEIFNKYNKDKKVRVFRFSVGQHNYERGPIQWMACENKGYYYEIPSIGAIRINTQEYL
DVLGRPMVLAGDKAKQVQWTNVYLDALELGLVITGTLPVFNITGQFENKTNLKNQLILGVM
GVDVSLEDIKRLTPRFTLCPNGYYFAIDPNGYVLLHPNLQPKNPKSQEPVTLDFLDAELEN
DIKVEIRNKMIDGESGEKTFRTLVKSQDERYIDKGNRTYTWTPVNGTDYSLALVLPTYSFY
YIKAKLEETITQARSKKGKMKDSETLKPDNFEESGYTFIAPRDYCNDLKISDNNTEFLLNF
NEFIDRKTPNNPSCNADLINRVLLDAGFTNELVQNYWSKQKNIKGVKARFVVTDGGITRVY
PKEAGENWQENPETYEDSFYKRSLDNDNYVFTAPYFNKSGPGAYESGIMVSKAVEIYIQGK
LLKPAVVGIKIDVNSWIENFTKTSIRDPCAGPVCDCKRNSDVMDCVILDDGGFLLMANHDD
YTNQIGRFFGEIDPSLMRHLVNISVYAFNKSYDYQSVCEPGAAPKQGAGHRSAYVPSVADI
LQIGWWATAAAWSILQQFLLSLTFPRLLEAVEMEDDDFTASLSKQSCITEQTQYFFDNDSK
SFSGVLDCGNCSRIFHGEKLMNTNLIFIMVESKGTCPCDTRLLIQAEQTSDGPNPCDMVKQ
PRYRKGPDVCFDNNVLEDYTDCGGVSGLNPSLWYIIGIQFLLLWLVSGSTHRLL

17 - human alpha2 delta-1 nucleic acid sequence

GCGGGGGAGGGGGCATTGATCTTCGATCGCGAAGATGGCTGCTGGCTGCCTGCTGGCCTTG
ACTCTGACACTTTTCCAATCTTTGCTCATCGGCCCCTCGTCGGAGGAGCCGTTCCCTTCGG
CCGTCACTATCAAATCATGGGTGGATAAGATGCAAGAAGACCTTGTCACACTGGCAAAAAC
AGCAAGTGGAGTCAATCAGCTTGTTGATATTTATGAGAAATATCAAGATTTGTATACTGTG
GAACCAAATAATGCACGCCAGCTGGTAGAAATTGCAGCCAGGGATATTGAGAAACTTCTGA
GCAACAGATCTAAAGCCCTGGTGAGCCTGGCATTGGAAGCGGAGAAAGTTCAAGCAGCTCA
CCAGTGGAGAGAAGATTTTGCAAGCAATGAAGTTGTCTACTACAATGCAAAGGATGATCTC
GATCCTGAGAAAAATGACAGTGAGCCAGGCAGCCAGAGGATAAAACCTGTTTTCATTGAAG

ATGCTAATTTTGGACGACAAATATCTTATCAGCACGCAGCAGTCCATATTCCTACTGACAT
CTATGAGGGCTCAACAATTGTGTTAAATGAACTCAACTGGACAAGTGCCTTAGATGAAGTT
TTCAAAAAGAATCGCGAGGAAGACCCTTCATTATTGTGGCAGGTTTTTGGCAGTGCCACTG
GCCTAGCTCGATATTATCCAGCTTCACCATGGGTTGATAATAGTAGAACTCCAAATAAGAT
TGACCTTTATGATGTACGCAGAAGACCATGGTACATCCAAGGAGCTGCATCTCCTAAAGAC
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TGGTGCAATAAGAATCAATACTCAGGAATATTTGGATGTTTTGGGAAGACCAATGGTTTTA
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ATCGGATAATAACACTGAATTTCTTTTAAATTTCAACGAGTTTATTGATAGAAAAACTCCA
AACAACCCATCATGTAACGCGGATTTGATTAATAGAGTCTTGCTTGATGCAGGCTTTACAA
ATGAACTTGTCCAAAATTACTGGAGTAAGCAGAAAAATATCAAGGGAGTGAAAGCACGATT
TGTTGTGACTGATGGTGGGATTACCAGAGTTTATCCCAAAGAGGCTGGAGAAAATTGGCAA
GAAAACCCAGAGACATATGAGGACAGCTTCTATAAAAGGAGCCTAGATAATGATAACTATG
TTTTCACTGCTCCCTACTTTAACAAAAGTGGACCTGGTGCCTATGAATCGGGCATTATGGT
AAGCAAAGCTGTAGAAATATATATTCAAGGGAAACTTCTTAAACCTGCAGTTGTTGGAATT

AAAATTGATGTAAATTCCTGGATAGAGAATTTCACCAAAACCTCAATCAGAGATCCGTGTGCTGGTCCAGTTTGTGACTGCAAAAGAAACAGTGACGTAATGGATTGTGTGATTCTGGATGATGGTGGGTTTCTTCTGATGGCAAATCATGATGATTATACTAATCAGATTGGAAGATTTTTTGGAGAGATTGATCCCAGCTTGATGAGACACCTGGTTAATATATCAGTTTATGCTTTTAACAAATCTTATGATTATCAGTCAGTATGTGAGCCCGGTGCTGCACCAAAACAAGGAGCAGGACATCGCTCAGCATATGTGCCATCAGTAGCAGACATATTACAAATTGGCTGGTGGGCCACTGCTGCTGCCTGGTCTATTCTACAGCAGTTTCTCTTGAGTTTGACCTTTCCACGACTCCTTGAGGCAGTTGAGATGGAGGATGATGACTTCACGGCCTCCCTGTCCAAGCAGAGCTGCATTACTGAACAAACCCAGTATTTCTTCGATAACGACAGTAAATCATTCAGTGGTGTATTAGACTGTGGAAACTGTTCCAGAATCTTTCATGGAGAAAAGCTTATGAACACCAACTTAATATTCATAATGGTTGAGAGCAAAGGGACATGTCCATGTGACACACGACTGCTCATACAAGCGGAGCAGACTTCTGACGGTCCAAATCCTTGTGACATGGTTAAGCAACCTAGATACCGAAAAGGGCCTGATGTCTGCTTTGATAACAATGTCTTGGAGGATTATACTGACTGTGGTGGTGTTTCTGGATTAAATCCCTCCCTGTGGTATATCATTGGAATCCAGTTTCTACTACTTTGGCTGGTATCTGGCAGCACACACCGGCTGTTATGACCTTCTAAAAACCAAATCTGCATAGTTAAACTCCAGACCCTGCCAAAACATGAGCCCTGCCCTCAATTACAGTAACGTAGGGTCAGCTATAAAATCAGACAAACATTAGCTGGGCCTGTTCCATGGCATAACACTAAGGCGCAGACTCCTAAGGCACCCACTGGCTGCATGTCAGGGTGTCAGATCCTTAAACGTGTGTGAATGCTGCATCATCTATGTGTAACATCAAAGCAAAATCCTATACGTGTCCTCTATTGGAAAATTTGGGCGTTTGTTGTTGCATTGTTGGT

18 - nucleotide sequence

GGGGATTGATCTTCGATCGCG

19 - nucleotide sequence

CTGAGATTTGGGGTTCTTTGG

20 - nucleotide sequence

TCGCCACCATGGCTGCTGGCTGCCTGCTG

21 - nucleotide sequence

TCGGAATTCCTCAGTGATGGTGATGGTGATGAGAAACACCACCACAGTCGGT